

MAY 29 - 30 2022

# LIVING CITIES CANADA: A VIRTUAL FORUM

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Summary Report



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## Introduction

[Living Cities Canada](#) is a pan-Canadian project to advance green infrastructure (GI) and enable Living Cities across Canada. Living Cities are places where GI (e.g., green roofs and walls, rain gardens and bioswales, wetlands and parks) is equitable, abundant and thriving. The [Living Cities](#) project is coordinated by [Green Communities Canada](#) (GCC) and supported by a team of partners from the [University of Toronto](#), the [Green Infrastructure Ontario Coalition](#), and local environmental partner organizations.

As part of the [Living Cities](#) project, a two-day forum was held on 29-30 March, 2022. The aim of the forum was to enable a space for dialogue among green infrastructure practitioners, researchers and advocates with the aim of exchanging ideas, experiences and practices on making green infrastructure “the new normal”.

Over two half-days, forum participants delved into the three pillars of a Living City - equity, abundance and thriving. They heard from experts and advocates in the GI space and dialogued with fellow participants. This report summarizes the presentations and discussions.

## Living Cities Canada: A Virtual Forum - Day 1 March 29, 2022

The first session started with a welcome and land acknowledgement by the Living Cities Project team followed by an opening session led by Dorothy Taylor, Elder from the Curve Lake First Nation. Christine Mettler, Project Manager of Living Cities Canada, then gave an overview of the forum and presented the agenda for both days.

### Session 1: An Equitable Living City

Session 1 was opened with a presentation from Dr. Andréanne Doyon (Simon Fraser University) who talked about equitable implementation of GI. Dr. Doyon emphasized the importance of including equity considerations during the planning and implementation of green infrastructure (GI) and presented planning tools that can assist with the equitable implementation of GI. During the decision-making phase, practitioners can use a variety of processes to assess opportunities for the deployment of GI within urban development projects by using equity criteria to understand the distribution of benefits and services, as well as to recognize areas in need (e.g., marginalised communities). Other tools such as GIS suitability analysis maps can assist in integrating equity-related layers into existing municipal maps. Dr. Doyon concluded her presentation by highlighting the importance of going beyond technical approaches and integrating equity considerations within political, institutional, financial and cultural aspects of decision-making processes during the implementation of GI.

The following presentation was delivered by Irene Ogata (City of Tucson) who talked about an equity framework for GI. Ogata emphasized the importance of an equity learning circle throughout the presentation, in other words, the importance of working together with other city experts and municipal project managers. This collaboration can assist in sharing not only experience from other experts, but also sharing the values and outcomes of what equitable GI implementation could look like for different communities. Collaborating with different partners can also assist in defining and sharing industry equity goals, best practices and metrics to track equity indicators during the implementation of GI. Focusing on the needs of marginalised communities as well as creating a common language can help to understand how structural inequity exists, what systems today perpetuate inequity and which obstacles are important to recognise within marginalised communities.

Afterwards, Vincent Ouellet Jobin (Centre d'écologie urbaine de Montréal) explored how to involve communities in sustainable stormwater management in Montreal's blue-green alleyways. Green infrastructure has various uses in a blue-green alley, including redirecting stormwater from disconnected gutters into green spaces (i.e., rainwater management) and also to create living spaces to enable community involvement. The Bâtiment 7 alley was a pilot project conceptualised by citizens through a series of workshops, with the aim of enabling green infrastructure in a community-led manner. Ouellet Jobin highlighted various lessons learned from the pilot project, such as the importance of enabling a decision-making structure that includes both local communities and organisations to realize projects that are closer to the needs of communities and are sustainable in the future.

The final presentation from the first session was given by Katya Reyna (Depave Portland). Depaving refers to transforming over-paved spaces into greenspaces and Depave Portland involves communities through different phases. Green infrastructure is used for stormwater and runoff solutions whilst also providing other benefits such as cooler surface temperatures and enabling spaces for local members of the community to interact. Sites are selected through

poverty maps where higher priority is given to high BIPOC percentage neighbourhoods. Communities are then involved in decision-making processes including voting exercises on infrastructure to be implemented, design of the location to be depaved and involving volunteers from all ages throughout the process from removing pavement to construction activities.

## **Session 2: A Policy Framework for Living Cities**

During the second session, Dr. Laura Tozer (University of Toronto) presented on *Pathways to Living Cities: A Policy and Governance Framework*. The presentation provided an overview of the document that is currently under development, which synthesizes key learnings about how municipalities in Canada and around the world have successfully implemented equitable, abundant, and thriving green infrastructure. The policy and governance framework can be used by communities to identify existing conditions related to GI, outline key opportunities and help communities develop their own course forward on what policies, plans, strategies, processes and instruments can help make their community a Living City.

## Living Cities Canada: A Virtual Forum - Day 2 March 30, 2022

Christine Mettler (Living Cities Canada / Green Communities Canada) opened the second day of the Living Cities Canada Forum with a summary of the first day and an overview of the agenda for the second day.

### Session 3: An Abundant Living City

The third session was opened by Alexander van der Jagt (Wageningen University & Research, Netherlands) who talked about mosaic governance as a strategy for equitable and abundant green infrastructure. Mosaic governance refers to an approach to urban GI planning and management that considers both horizontal and vertical coordination of ideas and resources, enabling inclusivity through the integration of a diversity of actors, values and institutions. Lessons learned from mosaic governance projects showed the importance of supporting grassroots initiatives, which contributes to more effective GI implementation. Earmarking funding to co-develop local GI initiatives was another important lesson learned from this project. However, the projects also showed that challenges need to be overcome to promote environmental justice outcomes, including limited policy learning, difficulties reaching and sustaining engagement with some socio-cultural groups and how alignment with municipal priorities influences level of support.

During the following session, Jennifer Court (Green Infrastructure Ontario) talked about how to make GI the new normal based on lessons learned from Ontario. The use of infrastructure language was emphasised as key to make GI the new normal, as this ensures that natural features are viewed as equals to other urban infrastructure (e.g., roads, bridges and pipes). Using infrastructure language also improves the eligibility for federal and provincial infrastructure funding and improves the management of natural features within urban development. To do so, it's important to frame GI around key infrastructure concepts, such as assets, cost savings and secondary services (co-benefits). Green Infrastructure Ontario developed an economic impact assessment of the GI sector in Ontario and found that in 2018, GI was responsible for \$8.6 billion in gross output of revenue and the creation of around 84,400 direct jobs. Moreover, lessons learned from the Advancing Municipal Action of Green Infrastructure project in Ontario were highlighted, including the importance of having municipal champions, having budgets for the full life-cycle of GI projects, using consistent language and incorporating GI into asset management plans.

In the third presentation, Cameron Owen (City of Vancouver) introduced Vancouver's Rain City Strategy and how it is transforming the landscape with GI. The Rain City Strategy has the aim to manage rainwater sustainably through green infrastructure that protects, restores and mimics the natural water cycle to help improve the water quality, prepare for climate change and enhance the livability in Vancouver. Experience implementing the Rain City Strategy in Vancouver has shown the many benefits from combining ecology, water management, art, and public spaces design.

The final presentation of the third session was given by Alison Shaw (Action on Climate Team, Simon Fraser University) who focused on how to create the business case for nature-based solutions. Using a low carbon resilience lens allows to identify and reduce climate risks and vulnerabilities, reduce GHG emissions and advance other co-benefits (e.g., health and biodiversity) during the implementation of GI in the form of nature-based solutions. Nature-based solutions can take different forms (e.g., natural assets, and blue and green infrastructure)



and can be found at different scales (e.g., regional, community, and building). Nature-based solutions can also assist in reducing a wide variety of risks which translates into avoiding a diversity of costs (e.g., damage and expanded infrastructure) as well as providing ecosystem services and other co-benefits that can be accounted both as savings and revenue.

## Session 4: A Thriving Living City

To open the fourth session of the forum, Carolynne Crawley (Msit No'kmaq) & Sheila Boudreau (SpruceLab Inc.) talked about the importance of Indigenous voices in GI work. Prioritising Indigenous voices and working with Indigenous Peoples in the implementation of GI can be part of reconciliation efforts in Canada. Experiences from working with students in the Wandering Spirit School in Toronto assisted in providing ideas for the Raindrop Plaza project. Other Indigenous led initiatives, such as the Miziwe Biik 'Earth Tending' programme that took place between May 3 and June 9, 2022 created seven paid part time jobs for First Nations, Inuit, and Métis Peoples, including thirteen trainers out of which five are Indigenous. The Earth Tending programme will improve Indigenous employment opportunities and will have a focus on physical, mental and spiritual health by reconnecting to nature and culture, and will also assist in decolonising and diversifying the GI sector.

The following presentation was given by Patrick Gilbride (Reep Green Solutions) & Alexandra Marson (City of Guelph) who talked about the lessons learned from the Residential Rebate Program in Guelph, Ontario. In January 2017, a stormwater service fee was implemented to fund the negative impacts from increased stormwater that is causing flooding and erosion, and impacting infrastructure, waterways and drinking water quality. The fee has enabled funding for maintenance and development of GI initiatives that reduce stormwater risks. Lessons learned from other incentives programmes showed the importance of encouraging onsite stormwater management by rewarding customers who reduce runoff quantity or improve the runoff quality. The Rain Garden Rebates is an example of an incentive programme that can cover up to \$2,000 in costs to build a rain garden, together with the support of a Rain Garden Coach that guides applicants through the application, approval and reimbursement process.

The following presentation was delivered by Tim van Seters (Sustainable Technologies Evaluation Program) who talked about lessons learned in operating and maintaining GI in the GTA. The maintenance of stormwater infrastructure comes with many challenges, including not being a priority, not being a revenue stream and not having urgent consequences. Sometimes constructing and maintaining stormwater infrastructure is not even on the radar of project managers. These challenges are exacerbated in public and private lands with lack of funding mechanisms, lack of staff, lack of compliance and even lack of awareness of ownership and responsibility for maintenance activities. However, low impact development in the form of GI eases some of these maintenance challenges as it is usually simple and low cost.

Bert van Duin (City of Calgary / University of Calgary) gave the final presentation on the day that focused on how to bridge the GI "Theory to Implementation" gap. There are a wide variety of barriers that are holding back the implementation of GI. A lack of targets results in not having numbers that can provide clearer expectations for GI projects (e.g., urban heat island). The lack of having a common terminology also translates into tensions or misunderstandings in what GI really is (e.g., rain gardens and bioretention). Moreover, there is a lack of expertise in GI that is not being disseminated through universities and colleges. Whilst the implementation of GI is still immature, it has many benefits that outweigh the problems and limits of grey infrastructure.

## Breakout & Plenary Session Summary of Themes

The participants in the Forum were green infrastructure practitioners, experts, advocates, and researchers from across Canada and beyond. Breakout sessions and plenary discussions offered opportunities for participants to dialogue and the major themes of these discussions are summarized in this section.

### Equity, (In)justice, and Marginalised Communities

Equity, social justice and authentic engagement of local and/or BIPOC communities was a priority concern raised in every session of the forum. We heard that the most work needed in GI falls within the equity pillar. Participants acknowledged that so many Canadian municipalities exist on stolen land and are part of Canada's legacy of structural racism and colonialism. The enduring injustices of this legacy is evident today in the geographies of Canadian cities and towns. High levels of resources have been and continue to be invested in some areas, while others must live with scarcity, securitisation or degradation of natural areas. Many participants expressed their commitment to equity-based work but were uncertain how to put that commitment into practice. Other participants with experience in integrating equity work and GI gave suggestions. For example, GI planners can measure and analyse socio-spatial factors for equity prioritization (e.g. income levels, impervious surfaces, or lack of green space) to identify potential project sites.

We heard how important it is to involve and listen to communities, especially BIPOC and other marginalised communities, early in the process to understand their needs and the issues they face. BIPOC and other marginalised communities tend to experience barriers in access to GI and green spaces. While targeting development of GI in the most under-natured communities is best practice, these communities very often have more imminent concerns (e.g. food security, inadequate shelter, employment stability). Participants pointed out that GI development in these communities ought to be leveraged in ways that addresses these issues. Investment in GI for a community should be a part of long-term work aiming for substantial change. In addition, multiple participants noted the positive impact of GI on land values can negatively impact marginalised communities who already live in the area, namely loss of affordability and increased risk of displacement or 'green gentrification'. It is important to ensure that where GI investment is planned, those communities who already use the space and who live in the vicinity are able to remain.

### Maintenance, Monitoring and Evaluation

Maintenance of GI was raised as a consistent challenge. Many municipalities' portfolio of natural and open space properties is in excess of the area they have the budget to maintain.

Participants shared their strategies for sustained long-term maintenance of GI. These strategies were often different types of agreements to establish who is responsible for maintenance, such as municipalities taking over from developers, MOUs with neighbourhoods, institutions leasing land and conservation easements with stewardship provided by a land trust. Partnerships between municipal government and/or social institutions and local community organizations can be advantageous for optimizing the long-term care and benefits of GI projects. Yet, participants at the forum shared many experiences where the management of these partnerships became sources of challenge for GI projects. Regardless of the particular arrangement of responsibilities, there was consensus among participants that there needs to be a maintenance



plan prior to implementation that includes tracking and designated staff and funding. Many also suggested creating resources (eg. site specific maintenance guides) for knowledge succession.

Monitoring programs should occur at the scale of 5 years and 10 years after construction in order to consider plant development and succession, which is longer than many programs are now. There are many aspects that may be important to monitor (e.g. stormwater management, biodiversity, social health, spiritual health) and priorities and approaches can vary from place to place. For example, a participant shared that Indigenous communities are likely to prefer different forms of evaluation, for example, by storytelling approaches over evaluation measured by numbers and statistics. It should be expected that marginalised communities will have specific desired outcomes that they would like to see included in evaluation.

## Funding

Clear revenue sources, as with stormwater fees, would make implementing GI easier. Municipalities are often limited in terms of how much money they can generate or mobilize for GI projects but could potentially connect community-based projects together to secure resources from other levels of government. Business models for GI should not only identify where and how to ask for "new money", but ways to mobilize existing funds strategically. This can be done by showcasing the value of natural assets through natural capital asset management. Participants talked about the benefits of having natural assets assessed for the level of service (eg. stormwater control and flood control) and other benefits they provide. These assessments add compelling evidence to rationales for responsible stewardship of natural assets and facilitates the inclusion of natural assets in municipal asset plans, which helps to secure on-going funding. In addition, many municipalities do not have abundant land available to develop new GI. Strategies for identifying and acquiring new land are needed, as are strategies for adapting land to meet multiple objectives.

Municipalities and NGOs have difficulty funding long-term maintenance of GI, and municipalities have chronic underfunding for infrastructure in general. Participants said that is relatively easy to obtain funding for new or pilot projects, but not for maintenance and ongoing stewardship. In addition, funding for early community relationship-building and engagement, as well as long-term ongoing support for community relationships and stewardship, is sorely needed.

## Consultation and Engagement

GI projects can be catalysts for participatory action that empowers people to take agency in the design and making of their community. To do this, GI work must go beyond infrastructural functionality and provide benefits that support the wellbeing of local people in their lives (e.g. spaces with shade, access to food gardens, etc.). The usual expert-led approach to development and engagement, including "deficit thinking" regarding communities, must be flipped. In addition, trust must be built by approaching existing community champions as an intermediary between community and GI developers

Consultation and engagement with any community must be adaptive to social inequities and barriers faced by people in that community. Communities who face barriers to accessing and using green space often also face barriers to participating in planning and policy decision-making. Participants brought up strategies to reduce these barriers, including paying people well for their time, providing accommodations for childcare, accessibility, language and other needs, and holding meetings about GI in the neighbourhood being addressed.

## Knowledge, Training, and Education

Sustaining the knowledge required within teams to perform maintenance is a challenge. In technical roles, knowledge of GI is not common enough so it is difficult to maintain expertise within teams. At policy and planning levels, GI specialist knowledge is also not common, which can limit resources directed towards GI. Many participants spoke about the barriers presented by gaps in training and education about GI, even within organisations and jurisdictions that are advancing GI projects. Many expressed the value of bringing the right staff on board to achieve the necessary breadth of competencies within the team, but also that internal training and education on an ongoing basis is essential. Not just for front-line staff, but management and board members too. Specifically, several participants shared the value their organizations realised from investing in anti-oppression training, trauma-informed practice training, and community development practices for their teams.

## Decolonization

Several participants discussed that GI develop cannot avoid acknowledging that Indigenous peoples have been living in relationship with this land for a very long time and therefore have a deep understanding of this land. Municipalities and organisations seeking to develop GI must take seriously their responsibility to involve local Indigenous peoples from the beginning in a collaborative relationship. People should be well compensated for their time and knowledge.

Participants also spoke of deconstructing colonialist framings and discourses around GI and natural assets. Even equity discourse can embody a human-centric perspective. This does not diminish the necessity of working to advance the equity for marginalized peoples. Rather, as we heard at the forum, it is a reminder that from an Indigenous perspective, there is no hierarchy between human and non-human relations. When thinking about planning GI, we need to talk about reconciliation not only with Indigenous peoples but also with the land.

## Governance

GI projects often fall within the jurisdiction of multiple overlapping organizations. Models for GI governance cannot expect municipalities to develop and govern GI on their own, but rather should address the need for communication with provincial and federal governments and other organizations. Because of GI development benefits so much from collaboration between governments at different levels, the lack of integration between departments and levels of government is a barrier. Interdisciplinary, diverse teams have the capacity to build relationships with a variety of actors and stakeholders. One participant shared how their organization is developing “bridging points” to have conversations with administrators and elected officials, as well as fellow staff. Private land developers and owners are necessary partners in GI. Challenges in this area include relationship building, long term responsibilities for maintenance, tensions between prioritizing equity and seeking returns on investments, and opposition when new revenue streams for GI place a new onus on property owners and taxpayers.

## Appendix – Forum Agenda

# Living Cities Canada: A Virtual Forum

TOWARD EQUITABLE, ABUNDANT AND THRIVING GREEN INFRASTRUCTURE IN CITIES ACROSS CANADA

## DAY 1: Tues. Mar. 29, 1-4:30pm ET

Time	Presentation / Activity	Speaker(s)
1:00PM	Welcome and land acknowledgment	Living Cities project team
1:05PM	Opening	Dorothy Taylor, Curve Lake First Nation
1:15PM	Overview of forum and the Living Cities Canada project	Christine Mettler, Green Communities Canada
<b>Session 1: An Equitable Living City</b>		
1:30PM	<b>Presentation:</b> Equitable implementation of GI	Dr. Andréanne Doyon, Simon Fraser University
1:40PM	<b>Presentation:</b> An equity framework for GI	Irene Ogata, City of Tucson
1:50PM	<b>Presentation:</b> Involving community members to create Blue-Green Alleys in Montreal	Vincent Ouellet Jobin, Centre d'écologie urbaine de Montréal
2:00PM	<b>Presentation:</b> Co-designing GI projects with affected communities	Katya Reyna, Depave Portland
2:10PM	<b>Breakout groups:</b> Challenges to equity and justice in green infrastructure implementation	
2:40PM	<b>Plenary discussion:</b> Challenges to equity and justice in green infrastructure implementation	
2:55PM	<b>COFFEE BREAK</b>	
<b>Session 2: A Policy Framework for Living Cities</b>		
3:10PM	<b>Presentation:</b> Pathways to Living Cities - A Local Policy and Governance Framework	Laura Tozer, University of Toronto
3:40PM	<b>Breakout Groups:</b> Pathways and barriers to Living Cities	
4:10PM	<b>Plenary discussion:</b> Pathways and barriers to Living Cities	
4:25PM	Thank you and closure of Day 1	The Living Cities team



## DAY 2: Wed. Mar. 30, 1-4:30pm ET

Time	Presentation / Activity	Speaker(s)
1:00PM	Welcome back; recap of day 1 and overview of day 2	Living Cities Project Team
Session 3: An Abundant Living City		
1:10PM	Presentation: Mosaic governance as a strategy for equitable and abundant GI	Alexander van der Jagt, Wageningen University & Research, Netherlands
1:20PM	Presentation: Making GI the New Normal - Lessons from Ontario	Jennifer Court, Green Infrastructure Ontario
1:30PM	Presentation: How Vancouver's <i>Rain City Strategy</i> is transforming the landscape with GI	Cameron Owen, City of Vancouver
1:40PM	Presentation: Creating the Business Cases for Nature-Based Solutions	Alison Shaw, Action on Climate Team, SFU
1:50PM	Breakout groups: Challenges and pathways to abundant green infrastructure	
2:15PM	Plenary Discussion: Challenges and pathways to abundant green infrastructure	
2:35PM	COFFEE BREAK	
Session 4: A Thriving Living City		
2:50PM	Presentation: Thriving people and places - The importance of Indigenous voices in GI work	Carolynne Crawley, Msit No'kmaq & Sheila Boudreau, SpruceLab Inc.
3:00PM	Presentation: Stormwater Fees and the Rain garden subsidy program in Guelph, ON	Patrick Gilbride, Reep Green Solutions & Alexandra Marson, The City of Guelph
3:10PM	Presentation: Operating and Maintaining a Living City - Lessons from STEP	Tim van Seters, Sustainable Technologies Evaluation Program (STEP)
3:20PM	Presentation: Bridging the GI "Theory to Implementation" gap	Bert van Duin, City of Calgary / University of Calgary
3:30PM	Breakout groups: Challenges and pathways to a thriving Living City	
3:55PM	Panel discussion: Key takeaways for advancing equitable, abundant and thriving GI in Canadian cities and towns	
4:25PM	Review key themes, wrap up forum	Living Cities team

